Remarks

Claims 1-6, 8, 11-17, and 19-26 are pending in the subject application. At page 2 of the office action, the Examiner maintains the rejection of claims 12-13 under 35 USC § 112, first paragraph. The Examiner states that the claims are enabled for a method of treating cancer but not for a method of preventing cancer. Applicants note that the term "protecting" in the first line of claim 12 is not intended to mean the infallible protection against tumor development. While this may hold true in some circumstances, the term protecting in claim 12 is intended to mean a delay of onset of disease and increase in survival time. Attention is drawn to examples 1 and 2 of the subject application, wherein the effective demonstration of such protection is demonstrated in an animal model system. Applicants reassert that the protection of an animal by administering a superantigen at an appropriate time after vaccination with a tumor specific antigen specific to melanoma protects against melanoma development in that animal. Reconsideration is requested.

In further support of the foregoing position regarding enablement, Applicants wish to schedule an interview with the Examiner to discuss the relevant data and scientific rationale relating to the issue of protection conferred by the methods claimed in claims 12 and 13. Dr. Howard Johnson, one of the present inventors, would in all likelihood participate in such interview. The undersigned attorney will be in contact with the Examiner to schedule a mutually convenient time.

Next, the Examiner points out that the claim to priority to the earlier U.S. Patent application no. 60/194,951 must be properly cross-referenced at the beginning of the application. The specification has been amended above to address this issue. Reconsideration is respectfully requested.

At page 3, the office action rejects claims 1-5, 11, 14-17, 20, 21, 23, 24, and 26 under 35 U.S.C. § 102(b), as being anticipated by WO 98/26747 ('747 publication). Applicants respectfully traverse.

First, the Examiner calls into question whether the applicants have a degree of understanding of the interplay between anergy and enhancement of immune response affected by the administration of superantigen. That is on a par with that disclosed in the '747 publication. Applicants do not see the relevance of such point with respect to the issue of patentability. However, Applicants do point out that one of the inventors, Dr. Howard Johnson, is considered a leading scientist in the area of superantigen research, and has authored numerous peer reviewed articles on the subject. The cited '747 publication does not represent the first teaching that administration of superantigens can lead to anergy or desensitization of T-cells. This phenomenon has been known for sometime, as evidenced by the review article co-authored by the present inventors on the subject. See second column, page 171 of attached review article. Indeed, the subject application even cites to this phenomenon, see page 6, last paragraph.

The issue with respect to the pending obviousness rejection centers on what is the most reasonable interpretation of what the '747 publication teaches. It is reasonable to conclude that the author of the '747 publication seems to be under the misapprehension that administering an antigen and administering a superantigen separately, and at a later time, produces anergy. The '747 authors own words on this issue bear repeating. "Co-administration of antigen or peptide with superantigen will avert the development of anergy as will IL-1. In contrast, anergy may be produced by preimmunization with peptide in solution followed within six to thirty days by superantigen given parenterally." The most credible interpretation of the '747 publication's own teachings is that anergy is achieved by administration of superantigen six days after immunization with an antigen. Applicants are unaware of any other discussion in the '747 publication that would somehow correct or qualify this clearly articulated teaching regarding the production of anergy utilizing an antigen and superantigen. Applicants respectfully request specific citation should the Examiner be of a different opinion.

In contrast to the teaching of the '747 publication, the subject application teaches that administration of a superantigen after immunization with an antigen, in fact, enhances the cellular immune response in mice when later challenged with live melanoma cells. Furthermore, mice administered with superantigen at eleven days post vaccination with an antigen showed an even higher protection against the challenge of

live melanoma cells. This is indeed a surprising discovery in view of the '747 publication's teachings that anergy, not an immune response, is achieved by the separate and later administration of superantigen after administration of an antigen.

Accordingly, in view of the above reasoning, the '747 publication lacks the necessary teaching in order to be a valid anticipatory reference. Specifically, the skilled artisan, from following the teachings of the '747 publication, would not know to perform a method that involves *in vivo* administration of a specific antigen associated with an undesired pathological condition, such as a cancer associated antigen, followed by the *in vivo* administration of a superantigen. Indeed, the skilled artisan would strictly want to avoid such a method because, as the '747 publication teaches, may desensitize the patient immune response to the pathological condition. Therefore, the '747 publication does not teach all of the elements of the claims as required to be an anticipatory reference. Reconsideration and withdrawal of this 35 U.S.C. § 102(b) rejection is respectfully requested.

Claims 6 and 8 are rejected under 35 U.S.C. § 103(a), as being obvious over the Kominsky et al. reference. Applicants traverse. Applicants point out that the Kominsky et al. reference pertains to an abstract for a meeting that took place the first week of April, 2000, and was made publicly available in mid-March 2000. This publication date was only a couple of weeks before the earliest priority date of the present application. Further, based on the filing date of U.S. provisional application no. 60/189,346, March 14, 2000, which was filed by the Applicants, the Kominsky et al. reference was made public, at best, only a few days before the filing date of such earlier provisional application. Applicants do not see why there would be a reason to question whether the Applicants conceived the invention claimed in claims 6 and 8 prior to the publication of the Kominsky et al. reference. However, should the patent office maintain this rejection, Applicants are prepared to submit a declaration to support the fact that they were in possession of the invention prior to the publication of the Kominsky et al. reference. In view of the foregoing remarks, Applicants respectfully request reconsideration of this 35 U.S.C. § 103(a) rejection.

Claims 1-6, 8, 11-17, and 19-26 are rejected under 35 USC § 112, first paragraph, based on the assertion that the specification does not contain a written description of the claimed invention. Applicants address each independent claim separately:

(a) Claim 1: The use of the term "predetermined" versus "optimized" is intended to emphasize that there is decided time at which the superantigen will be administered after the administration of the melanoma specific antigen composition. Use of the term "predetermined", whether specifically recited in the specification or not, is a fair and reasonable term to use to encapsulate the plentiful teachings in the subject application regarding the intentional administration of a superantigen at a time after immunization with an antigen composition. Applicants are unclear as to why the Office Action underlines "cellular immune response". This was not a new limitation added to the claim.

(b) Claim 8: with respect to the rejection of the use of "predetermined" Applicants incorporate the comments provided in the discussion from (a) above.

(c) Claim 12: the office action underlines the phrase "tumor specific antigen specific to melanoma." The specification teaches that antigens associated with a specific pathological condition may be used for administration, which is then followed by administration of a superantigen, see Summary of the Invention. The application teaches that melanoma is one pathological condition to which the method of protection may be aimed, see examples 1 & 2. Thus, antigens associated with melanoma are generally and specifically are explicitly and implicitly taught in the subject application.

(d) Claim 19: the activation of splenocytes is described in Example 3 of the subject application, among other places.

(e) Claim 20: the remarks made in (c) above are incorporated herein.

(f) Claim 21: Applicants are unclear as to how this rejection applies to claim 21.

(g) Claim 22: the Summary of the invention and the claims as filed provide support for the regimen of booster vaccinations

(h) Claim 23: the comments in (c) above are incorporated herein.

(i) Claim 24: Applicants are unclear as to how this rejection applies to this claim.

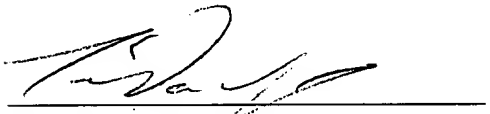
(j) Claim 25: the Summary of the invention and the claims as filed provide support for the regimen of booster vaccinations.

(k) Claim 26: Applicants are unclear as to how this rejection applies to this claim.

In view of the above remarks, Applicants respectfully request reconsideration of the rejection under 35 USC § 112, first paragraph.

Applicants assert that all claims are in a condition for allowance, and such action is respectfully requested. Applicants invite the Examiner to call the undersigned if clarification is needed on any aspect of this response after entrance and consideration of the remarks presented herein.

Respectfully submitted,



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